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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/837,877 | 04/19/2001 | Shunpei Yamazaki | 0756-2298 | 8131 |
| 22204 | 7590 | 02/25/2005 | EXAMINER | |
| NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128 | | | LEWIS, MONICA | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2822 | |

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,877

Applicant(s)

YAMAZAKI ET AL.

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,10-16 and 22-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the election filed November 22, 2004.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/28/04 has been entered.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Priority

4. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan on 12/28/98. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

Election/Restrictions

5. Applicant's election with traverse of Embodiment I on 11/22/04 is acknowledged. The traversal is on the ground(s) that "claim 1 is actually generic to Embodiments II-VI." The Examiner agrees with Applicant that claim 1 is generic to embodiments II-VI. Upon allowance of generic claim 1, all claims to species II-VI which include all the limitations of claim 1 will

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also be allowed. Additionally, newly submitted claims 22-24 are held to be non-elected as being drawn to the other non-elected embodiments.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1, 5, 6, 9 and 17-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Kawasaki et al. (U.S. Patent No. 6,424,012).

In regards to claim 1, Kawasaki et al. (“Kawasaki”) discloses the following:

a) the pixel TFF has a channel formation region (407) formed over a first wiring line (403) with an insulating layer (402) interposed, and has a low concentration impurity region (406) that is in contact with the channel formation region and overlaps the first wiring line (For Example: See Figure 8b); and

b) the storage capacitor is formed from a capacitor wiring line (415), a semiconductor region (414) that has the same composition as the channel formation region or the low concentration impurity region, a part of the insulating layer and wherein the first wiring line and the capacitor wiring line are formed on the same layer (For Example: See Figure 8b).

In regards to claim 5, Kawasaki discloses the following:

a) the channel formation region of the pixel TFT and the semiconductor region of the storage capacitor are formed of the same semiconductor layer (For Example: See Figure 8b).

In regards to claim 6, Kawasaki discloses the following:

a) the first insulating layer is appropriately an oxide or halogenated compound containing an element selected from the group consisting of tantalum (Ta), titanium (Ti), barium (Ba), hafnium (Hf), bismuth (Bi), tungsten (W), thorium (Th), and lead (Pb) (For Example: See Column 19 Lines 45-51).

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In regards to claim 9, Kawasaki discloses the following:

a) the pixel TFT is connected to the source wiring line (416) and the gate wiring line, and the storage capacitor is formed under the source wiring line and/or the gate wiring line (For Example: See Figure 8b).

In regards to claim 17, Kawasaki discloses the following:

a) semiconductor device is an active matrix liquid crystal display or an active matrix EL display (For Example: See Column 1 Lines 5-22).

In regards to claim 18, Kawasaki discloses the following:

a) semiconductor device is a video camera, a digital camera, a projector, a projection TV, a goggle type display, an automobile navigation system, a personal computer, or a portable information terminal (For Example: See Column 1 Lines 5-22).

In regards to claim 19, Kawasaki discloses the following:

a) a cross section of the first wiring is taper shaped (For Example: See Figure 8b).

In regards to claim 20, Kawasaki discloses the following:

a) a cross section of the capacitor wiring line is taper shaped (For Example: See Figure 8b).

In regards to claim 21, Kawasaki discloses the following:

a) a second wiring line (416) is formed over the channel formation region with an insulating layer (419) interposed between (For Example: See Figure 8b).

In regards to claim 22, Kawasaki discloses the following:

a) wherein the insulating layer comprises a first insulating layer and a second insulating layer (For Example: See Figure 8b and Column 19 Lines 45-51).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as obvious over Kawasaki et al. (U.S. Patent No. 6,424,012) in view of *Microchip Fabrication* by Peter VanZant.

In regards to claim 4, Kawasaki fails to disclose the following:

a) the first wiring line is appropriately a conductive film mainly containing an element selected from the group consisting of tantalum (Ta), chromium (Cr), titanium (Ti), tungsten (W), molybdenum (Mo), and silicon (Si), or an alloy film or silicide film containing the above elements in combination, or a laminate of the conductive films, the alloy films, or the silicide films.

However, Van Zant discloses the use of titanium (For Example: See Page 403). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Kawasaki to include the use of floating state as disclosed in Someya because it aids in preventing deterioration (For Example: See Paragraph 148 and 149).

Additionally, since Kawasaki and Van Zant are both from the same field of endeavor, the purpose disclosed by Van Zant would have been recognized in the pertinent art of Kawasaki.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as obvious over Kawasaki et al. (U.S. Patent No. 6,424,012) in view of Someya et al. (U.S. Publication No. 2002/0080295).

In regards to claim 7, Kawasaki discloses the following:

a) the first wiring line (For Example: See Figure 8b).

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In regards to claim 7, Kawasaki fails to disclose the following:

- a) floating state.

However, Someya et al. ("Someya") discloses the use of floating state (For Example: See Paragraph 148). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Kawasaki to include the use of floating state as disclosed in Someya because it aids in preventing deterioration (For Example: See Paragraph 148 and 149).

Additionally, since Kawasaki and Someya are both from the same field of endeavor, the purpose disclosed by Someya would have been recognized in the pertinent art of Kawasaki.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as obvious over Kawasaki et al. (U.S. Patent No. 6,424,012) in view of Murade (U.S. Publication No. 2001/0030722).

In regards to claim 8, Kawasaki discloses the following:

- a) the first wiring line (For Example: See Figure 3).

In regards to claim 8, Kawasaki fails to disclose the following:

- a) the first wiring line is kept at the lowest power supply electric potential.

However, Murade discloses the use of the lowest potential (For Example: See Paragraph 15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Kawasaki to include the use of the lowest potential as disclosed in Murade because it aids in preventing deterioration (For Example: See Paragraph 15).

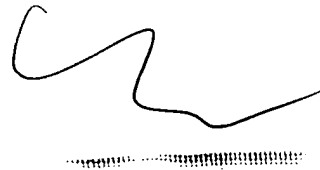
Additionally, since Kawasaki and Murade are both from the same field of endeavor, the purpose disclosed by Murade would have been recognized in the pertinent art of Kawasaki.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML

February 22, 2005



Mary Wilczewski
Primary Examiner